



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

# THE NORTH POLAR PROBLEM.

BY ADMIRAL A. H. MARKHAM, R. N.

---

THE solution of what I have designated as the North Polar problem, has puzzled and set at defiance the scientific and nautical world for many years. By the North Polar problem I allude to the successful exploration of that mysterious region which has for its centre the northern axis of our globe, and the discovery of that imaginary spot which is universally known and spoken of as the North Pole.

Many attempts have been made, some of them on a very elaborate scale, by brave men, supported by equally gallant followers, to solve the problem, but, so far, these attempts have not been rewarded with complete success.

The idea of exploring high northern latitudes is no mere chimera of the present day ; it is one that originated many centuries ago, and it has been fostered and attempted with more or less energy and enthusiasm ever since.

It is difficult to ascribe, with any approach to accuracy, the date of the despatch of the earliest Arctic expedition. We find in the pages of Hakluyt, Purchas, and other old historians, the fact gravely announced that Arthur, King of England, sailed with a squadron of ships so long ago as the sixth century with the object of subjugating and obtaining possession of Iceland. Another historian, during the same period, alludes to Greenland as a dependency of Britain, although the existence of that large continent was not known until discovered by Gunbjorn, and subsequently by Eric the Red, 500 years afterwards.

It is also related how, in the ninth century, a certain nobleman named Othar who resided in the island of Heligoland sailed, under the auspices of King Alfred of England, on a voyage of discovery to the Arctic Regions, and on his return he reported to His

Majesty that he had succeeded in reaching "that point of the globe beyond which it again sinks to the South!" If this statement be accepted as a veracious one, we can arrive at but one conclusion, and that is that the North Pole was actually discovered and reached a thousand years ago, for the only interpretation that can be put on the above words is, that Othar reached a position on this terrestrial globe terminating at its extreme northern point!

Then we hear of a worthy Franciscan friar who in the year 1360, in the reign of Edward the Third, sailed from England to the "region situate under the North Pole," and this is given to us on no less an authority than Gerard Mercator, the renowned cartographer.

The Church in the early days appears to have taken a very prominent and leading part in matters appertaining to Arctic exploration, for during the reign of Henry the Eighth we read of a canon of St. Paul's Cathedral sailing in a vessel, aptly named the "*Dominus Vobiscum*," intent on the exploration of high latitudes.

As, however, there is absolutely nothing authentic in existence relative to the geographical results obtained by these and other amateur explorers, we must accept their accounts with some reservation, even if we do not dismiss them altogether from our mind, as either mythical or untrustworthy, and therefore unworthy of serious consideration, and turn our attention to those voyages undertaken in more modern times, the accounts of which are better authenticated and worthy of credence.

I do not propose in this article to deal with those numerous expeditions that were despatched from various countries for the purpose of attempting to achieve the Northeast or the Northwest passages, although the reports of those expeditions, and the experience gained therefrom, have assisted us very materially in our endeavors to solve the North Polar problem; I only intend alluding, very briefly, to those explorers who have succeeded in crossing the threshold of the unknown region, and have advanced our geographical knowledge *polewards*.

The first one then to which I shall refer, is that undertaken in the year 1607 by that sturdy old navigator Henry Hudson at the instance, and on behalf, of certain "Worshipfull Merchants of London." The express object of this venture was the dis-

covery of a passage *across the North Pole* to Japan and China. The name of Henry Hudson is familiar to all living on the American side of the Atlantic, for it is immortalized by that beautiful river on which is situated the large and important commercial capital of the United States; it is also applied to an enormous territory in the northern part of the great continent of North America; while one of the most extensive bays in the world, with the strait leading thereto, is named after him.

During Hudson's memorable voyage, although he failed in discovering a highway across the Pole, he succeeded in carrying his ship to a higher latitude along the west coast of Spitzbergen than had ever been reached before.

The lateness of the season, combined with the unseaworthy condition of his little craft, compelled him to relinquish all further attempts to persevere in his enterprise, and necessitated his return to England. The ultimate fate of this skilful and gallant seaman on a later expedition was a truly tragical one. Fearing that his rashness and intrepidity would endanger the lives of all on board, a portion of the crew mutinied, after having spent a winter in Hudson's Bay, and placing him with his son and eight others, who remained loyal to their chief, in a small boat, they in a most heartless manner cut the boat adrift, and thus exposed all on board to a terrible and cruel death, for they were never afterwards heard of.

A few years later, namely in 1616, that stout old sailor William Baffin, sailed along the west coast of Greenland, through the bay which now bears his name, until he succeeded in reaching the 78th parallel of latitude, where he discovered an opening extending in a northerly direction, which he named Smith Sound, after Sir Thomas Smith the originator of the enterprise, and chairman of the so-called Muscovy Company. At his highest position Baffin observes that he found the "greatest variation of the compass of any part of the world known," namely, 56° westerly. He returned to England in safety on the 30th of August. Although this voyage had for its primary object the discovery of the Northwest passage, it may be considered as essentially a Polar one, for it resulted in the discovery of that channel which, so far, has been the road by which the nearest approach to the Pole has been made.

It may also be remarked *en passant* that this voyage, in con-

junction with those made a few years earlier by John Davis, led to the prosecution of the whale fishery, which, in those waters, has proved so remunerative to all who have been sufficiently energetic and enterprising to embark in the exciting trade.

Passing over the expedition of Captain Phipps in 1773, and Captain Buchan in 1818, which, although they added materially to our knowledge of the state and condition of the ice in high latitudes, were otherwise devoid of important results, we come to the famous attempt made by Captain Sir Edward Parry to reach the North Pole in 1827.

There was no man better qualified, by experience and knowledge, to express an opinion relative to Arctic exploration than Sir Edward Parry, who was deservedly regarded as, *facile princeps*, the first and foremost of Arctic explorers. Having given the matter his most careful consideration, he had conceived the idea of proceeding in a ship to the north coast of Spitzbergen, and thence travelling, by means of boats and sledges, over the ice to the North Pole, which he thought it possible to reach before the winter set in. His scheme was a bold one, but it was supported by many eminent men of science and other authorities on the subject, and was favorably entertained by Her Majesty's Government.

A ship was therefore selected and fitted out for the service, and the command of it was entrusted to Sir Edward, with instructions to carry out his plan to the best of his judgment and discretion. The idea was, it must be acknowledged, even with our present lights to guide us, a sound one; but, unfortunately, there was one very important factor in the execution of the scheme that had not received the consideration it deserved, and which really was the principal cause of its failure; and that was the general drift of the whole body of the pack, on which the explorers were travelling, to the southward. They found, after incredible exertions, accompanied by severe bodily hardships and fatigue, that they were drifting to the southward at a greater daily rate than they were advancing in a northerly direction, thus compelling them, most reluctantly and to their great disappointment, to abandon the attempt and return to their ship.

But such good progress had been made prior to the breaking up of the pack, that Sir Edward had the satisfaction and gratification of announcing that they had reached the latitude of

82° 45' north, a very much higher position than had ever before been attained, and more than one hundred and twenty miles to the northward of the position reached by Henry Hudson two hundred years before !

The great mistake made by Parry, in the prosecution of this voyage, was in not passing the winter in his ship off the coast of Spitzbergen. Had he done so, he would have started with his travelling parties early in the following spring, when the ice would have been consolidated in one extensive pack, instead of commencing his journey northwards when the summer was well advanced and the pack, consequently, in a state of disruption, broken up into innumerable floes, necessitating the use of boats in crossing the channels that separated them, as well as sledges. In fact, it would have been the difference between sledging over a stationary, instead of a moving broken up, pack. It was an expedition to which a period of at least eighteen months should have been devoted, instead of only six ! Had this been the case a very much higher latitude would have been reached, for it is well known that the pack to the north of Spitzbergen consists of fairly smooth and level floes, very different to the heaped up masses of heavy ice encountered in other parts of the Polar ocean.

The next expedition that merits our attention was the one despatched by the United States in 1871. It was commanded by Captain Hall, an enthusiast in all matters relating to the polar regions, and a man who had lived for many years among the Eskimos, with a view of obtaining practical experience of their mode of life and travelling. The route selected by Hall was by way of Smith Sound, the channel already alluded to as having been discovered and named by Baffin, and the entrance to which had been explored and partially surveyed by the expeditions under the respective commands of Dr. Elisha Kane and Dr. Hayes. With such assiduity and skill did Captain Hall push on in his little steamer "Polaris" that he succeeded in taking his ship to the latitude of 82° 5' N., a nearer position to the pole than had ever before been reached in a ship. At this point, however, his further progress was arrested by a barrier of massive ice through which it was absolutely impossible to penetrate, and he was compelled to retreat a few miles to the southward, where he was fortunately able to secure his ship in safety for the winter under the lee of a large grounded iceberg, appropriately named Provi-

dence Berg, off the northwest coast of Greenland. This voyage of Captain Hall's proved conclusively the enormous advantages possessed by a ship propelled by steam power over a sailing vessel when endeavoring to force a passage through the ice-clad seas of the north.

Captain Hall's untimely death, shortly after he had established his ship in winter quarters, put a stop to all further exploring work, and the remaining members of the expedition returned to America, after undergoing great privations under circumstances so well known that it is unnecessary to recapitulate them here.

While Hall was prosecuting his researches in the direction of Greenland, another expedition, fitted out by Austro-Hungary, had been despatched with the object of exploring the unknown area to the north of Novaya Zemlya. In a geographical sense the outcome of this enterprise was most important, for it resulted in the discovery of a large continent, the existence of which was previously unknown, and which received the name of Kaiser Franz Josef Land. The discovery of this land was made in a very remarkable manner. The ship in which the explorers were embarked, the "Tegetthof," was beset by the ice a few miles off the northwest coast of Novaya Zemlya, and thus imprisoned was drifted, helplessly, first to the northeast and then to the northwest. In spite of the utmost exertions that were made, those on board were powerless to extricate her from the icy fetters in which she was so firmly held.

Suddenly one day, after a period of thirteen long weary months of forced inactivity, to their amazement land, dark high land, was observed looming up in the far north, and they realized that they had, unwittingly, become the discoverers of a new territory, and that their expedition was, after all, to be a great geographical success.

The ship continued to drift for some months afterwards, gradually nearing the land, until eventually the pack in which she was frozen so firmly, impinged on an island and became stationary. This afforded them an opportunity of exploring the mysterious continent, and it was one that they immediately availed themselves of. With such energy did Lieutenant Payer conduct this duty, with the limited time that was at his disposal, that he succeeded in reaching with sledges, the latitude of

82° 5', precisely the same latitude, by a curious coincidence, as that reached by Hall off the coast of Greenland almost at the same time. Shortly after Payer's return the "Tegetthof" was abandoned, the officers and crew making the best of their way to Novaya Zemlya, where they were eventually rescued and brought home.

The discovery of Franz Josef Land was of the greatest geographical interest, more especially with its relation to the solution of the North Polar problem, for Payer reported that he had seen land to the northward which he estimated to be in latitude 83°, and it was supposed to extend even much further north.

Meanwhile an English expedition, fitted out by Government, started in 1875 under the command of Sir George Nares, with orders to follow in the footsteps of Captain Hall up Smith Sound, and endeavor, if possible, to reach the North Pole.

Nares succeeded in face of great difficulties, caused by the vast accumulation of ice that he encountered, in passing the position reached by the American explorers, and of securing his ship, the "Alert," in winter quarters off the northeast coast of Grinnell Land in latitude 82° 20'.

Unfortunately he could proceed no further in his vessel, being stopped by a barrier of enormously heavy ice that extended right across his path from Greenland to Grinnell Land, the land trending away on either side of him to the east and to the west, with no indications of the existence of land to the north.

In the following spring his travelling parties did good work in exploring the north coast of Grinnell Land to the west, and the northwest coast of Greenland to the east, while a third party sledged across the frozen sea in a due northerly direction, reaching the latitude of 83° 20' 26", a position just within 400 miles of the North Pole. The difficulties of travelling consequent on the rugged nature of the ice, which was found piled up in large chaotic masses, and the almost complete prostration of the party caused by the outbreak of scurvy, rendered a nearer approach to the Pole impossible, and the travellers were forced to return to their ship after an absence of about eleven weeks. No land was visible in any direction from the farthest point reached.

A few years afterwards, namely, in 1882, Lieutenant Lockwood, attached to the United States expedition, under the command of Major Greeley, succeeded in reaching a position on the northwest coast of Greenland, in about latitude 83° 23'.



The exploring parties sent out by Major Greeley only confirmed the report brought home by the English of the massive character of the ice, and the impracticability of reaching the Pole in that direction. It is, however, possible to reach a somewhat higher latitude than that attained either by the English under Nares or the Americans under Greeley, if it is found feasible to establish winter quarters on the most northern known part of Greenland, whence travelling parties could be despatched in the early spring, provisioned and equipped in every way for an extended absence, say of three months.

The difficulty, however, lies in the establishment of a base of operations in such a high latitude.

Lieutenant Peary, of the United States Navy, has quite recently been engaged in a most successful exploration of Greenland. He has conclusively proved, by his marvellous sledge journeys across that continent, the truth of what I have just asserted, for had he been able to establish his headquarters on the north coast of Greenland, and then endeavored to sledge polewards, he would, undoubtedly, have succeeded in reaching a very high northern position. As it is, we are largely indebted to him for much useful geographical and other scientific information.

I have now endeavored, in as detailed a manner as the space placed at my disposal in this REVIEW will admit, to set before my readers the various attempts that have been made during the last three centuries to reach the North Pole. It will be seen that science, experience and modern inventions and improvements have not, after all, assisted us very materially in reaching that hitherto inaccessible spot. For while other parts of the world, for instance, in North and South America, in Africa, and notably in Australia and New Zealand, which 300 years ago were absolutely unknown, have now been not only explored, but brought under the influence of civilization, the North Pole remains as unapproachable as ever. During all that long period we have only succeeded in advancing 130 miles out of the 530 that separated Henry Hudson in 1607 from the Pole; while during the last seventy years, that is to say, since Sir Edward Parry made his bold push for the north, we have only succeeded in reaching a position forty miles beyond that reached by that successful navigator. An accomplished distance of not more than two miles for each year that has elapsed !

This, it must be confessed, is not much to boast of. It is an exceedingly slow rate of progression, but it serves very conclusively to prove the enormous difficulties that attend the solution of the problem.

There is, at the present moment, an area of about a million and a half square miles, the approximate centre of which is the North Pole, that is absolutely unknown.

I have shown that the cordon, or belt, that embraces this unknown region has been penetrated for short distances in three localities, namely, to the latitude of  $82^{\circ} 5'$  in Franz Josef Land, to  $82^{\circ} 45'$  north of Spitzbergen, and to  $83^{\circ} 23'$  north of Greenland.

By referring to a circumpolar map of the southern hemisphere, it will be seen that these penetrations, or approaches to the North Pole, have all been made within sixty degrees east and west of the meridian of Greenwich. In the high meridians of longitude, that is to say those passing through Bering's Strait and thereabouts, the undiscovered area extends to a greater distance to the southward, and the Pole in this direction has not been approached to within 700 miles. This is to be accounted for by the absence of land and by the presence of a barrier of very heavy ice, which has invariably been met in comparatively low latitudes north of Bering's Strait, and which has hitherto proved an insuperable difficulty to the successful navigation of a ship.

In order to ensure success in Arctic exploration it is essential that there should, if possible, be a continuity of coast line. The total absence of known land in the neighborhood of Bering's Strait, renders exploration in that quarter undesirable until, at any rate, other directions have been attempted.

It was the sudden termination of land on either side of Smith Sound, that is to say land trending in a northerly direction, that prevented Nares from attaining an even higher latitude than that reached by his travelling parties.

Had Sir Edward Parry been sledging along a coast line instead of forcing his way through a moving and broken-up pack, he would assuredly have reached a position nearer to the Pole than the one he gained. The great desideratum therefore in selecting a route for Polar exploration, is the presence of land trending to the northward. So long as this can be found, so sure

is it that its northern termination, however far it may be situated, will be reached. This particular condition, so far as we know to the contrary, is to be found in Franz Josef Land, for Lieutenant Payer has stated that he saw high land to the north of the position which he reached, and which he estimated must have been situated in latitude  $83^{\circ}$ , and, from the configuration of the land thus seen, taken in connection with the nature of the coast along which he was travelling, it is more than probable that Franz Josef Land extends a considerable distance beyond the furthest land that has yet been discovered. Taking all things into consideration, it seems to me more than likely that, when the North Polar problem is solved—and solved it assuredly will be—the solution of it will be found in the direction of Franz Josef Land.

It is by this route, I feel sure, that the greatest amount of geographical success is to be achieved. At the present moment an expedition, fitted out and despatched through the liberality and munificence of Mr. Harmsworth and under the command of Mr. Jackson, is prosecuting its researches in this direction, and I am confident that we shall soon hear, with most successful results. We know that the members of the expedition will have great difficulties to encounter, and great hardships to endure, but we also know that these difficulties will be bravely grappled with and these privations heroically endured, as they have been in bygone times by those who have gone before them, and whose gallant deeds they are emulating in their brave endeavors to solve the problem.

In addition to the Jackson-Harmsworth expedition, which has now spent two winters in the ice-clad regions of the north, we must not omit to allude to that gallant and enthusiastic explorer, Nansen, and his brave followers, who have already passed three winters, frozen up in all probability, in their little vessel, the “Fram,” somewhere in the unknown area, but whose exact locality it is impossible to predict.

Rumors, but so far unauthenticated, have been circulated recently, indicating their presence to the north of Siberia. I do not attach much weight to these reports. Should there be any foundation for them it will, I fear, be a proof that Nansen has been unsuccessful in accomplishing the main object he had in view, namely, the discovery of the North Pole, for it tends to the

belief that he has been compelled to abandon his ship and return in the same direction in which he set out.

Our best wishes are with him and his gallant companions, and a warm and hearty welcome will be extended to them on their return, whether they have been successful in the achievement of their object, or have failed in consequence of the insuperable difficulties they have had to contend with.

In conclusion, I am inclined to think that everything is in favor of the solution of the problem, and although we are well aware that the North Polar nut is a hard one to crack, it is one that is well worth cracking, and cracked it undoubtedly will be before many years have elapsed. The introduction of steam as a motive power to ships will materially facilitate the solution, nor must we omit to mention the great improvements that have lately been effected in the conservation of provisions of all kinds and descriptions, for these will materially minimize the evil effects of sickness, particularly scurvy; while our increased knowledge of hygienic principles will enable us to keep our ships, or other habitations for the explorers, in a pure and healthy state, and, finally, the valuable experience we have already gained in all those expeditions that have wintered in the Arctic regions, will be of the greatest importance in furthering the successful efforts of future attempts to solve the North Polar problem.

A. H. MARKHAM.